



[4910-13]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 29

[Docket No.FAA-2017-1129; Notice No. 29-042-SC]

**Special Conditions: Bell Helicopter Textron, Inc. (BHTI), Model 525 Helicopter; Mode
Annunciation**

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed special conditions.

SUMMARY: We propose special conditions for the BHTI Model 525 helicopter. This helicopter will have a novel or unusual design feature associated with fly-by-wire flight control system (FBW FCS) functions that affect the pilot awareness of the flight control modes while operating the helicopter. The applicable airworthiness regulations do not contain adequate or appropriate safety standards for this design feature. These proposed special conditions contain the additional safety standards that the Administrator considers necessary to establish a level of safety equivalent to that established by the existing airworthiness standards.

DATES: Send your comments on or before **[insert date 45 days after date of publication in the Federal Register]**.

ADDRESSES: Send comments identified by docket number [FAA-2017-XXXX] using any of the following methods:

- ☐ Federal eRegulations Portal: Go to <http://www.regulations.gov> and follow the online instructions for sending your comments electronically.

- Mail: Send comments to Docket Operations, M-30, U.S. Department of Transportation (DOT), 1200 New Jersey Avenue, SE., Room W12-140, West Building Ground Floor, Washington, D.C., 20590-0001.
- Hand Delivery of Courier: Take comments to Docket Operations in Room W12-140 of the West Building Ground Floor at 1200 New Jersey Avenue, S.E., Washington, D.C., between 8 a.m., and 5 p.m., Monday through Friday, except Federal holidays.
- Fax: Fax comments to Docket Operations at 202-493-2251.

Privacy: The FAA will post all comments it receives, without change, to <http://www.regulations.gov>, including any personal information the commenter provides. Using the search function of the docket website, anyone can find and read the electronic form of all comments received into any FAA docket, including the name of the individual sending the comment (or signing the comment for an association, business, labor union, etc.). DOT's complete Privacy Act Statement can be found in the Federal Register published on April 11, 2000 (65 FR 19477-19478), as well as at <http://DocketsInfo.dot.gov>.

Docket: Background documents or comments received may be read at <http://www.regulations.gov> at any time. Follow the online instructions for accessing the docket or go to the Docket Operations in Room W12-140 of the West Building Ground Floor at 1200 New Jersey Avenue, SE., Washington, D.C., between 9 a.m., and 5 p.m., Monday through Friday, except Federal holidays.

FOR FURTHER INFORMATION CONTACT: George Harrum, Aerospace Engineer, Rotorcraft Standards Branch, Policy and Innovation Division, FAA, 10101 Hillwood Pkwy, Fort Worth, TX 76177; telephone (817) 222-4087; email George.Harrum@faa.gov.

SUPPLEMENTARY INFORMATION:

Comments Invited

We invite interested people to take part in this rulemaking by sending written comments, data, or views. The most helpful comments reference a specific portion of the special conditions, explain the reason for any recommended change, and include supporting data.

We will consider all comments we receive on or before the closing date for comments. We will consider comments filed late if it is possible to do so without incurring expense or delay. We may change these special conditions based on the comments we receive.

Background

On December 15, 2011, BHTI applied for a type certificate for a new transport category helicopter designated as the Model 525. The aircraft is a medium twin-engine rotorcraft. The design maximum takeoff weight is 20,500 pounds, with a maximum capacity of 19 passengers and a crew of 2.

The BHTI Model 525 helicopter will be equipped with a four-axis full authority digital FBW FCS that provides for aircraft control through pilot input and coupled flight director modes. Current regulations are inadequate in the area of pilot awareness of the flight control modes while operating the helicopter. The proposed special condition will require that suitable mode annunciation be provided to the flight crew for events that significantly change the operating mode of the system but do not merit the traditional warnings, cautions, and advisories.

Type Certification Basis

Under the provisions of 14 CFR § 21.17, BHTI must show that the Model 525 helicopter meets the applicable provisions of part 29, as amended by Amendment 29-1 through 29-55

thereto. The BHTI Model 525 certification basis date is December 31, 2013, the effective date of application to the FAA.

If the Administrator finds that the applicable airworthiness regulations (i.e., 14 CFR part 29) do not contain adequate or appropriate safety standards for the BHTI Model 525 because of a novel or unusual design feature, special conditions are prescribed under the provisions of § 21.16.

Special conditions are initially applicable to the model for which they are issued. Should the type certificate for that model be amended later to include any other model that incorporates the same or similar novel or unusual design feature, the special conditions would also apply to the other model under § 21.101.

In addition to the applicable airworthiness regulations and special conditions, the BHTI Model 525 helicopter must comply with the noise certification requirements of 14 CFR part 36, and the FAA must issue a finding of regulatory adequacy under § 611 of Public Law 92-574, the "Noise Control Act of 1972."

The FAA issues special conditions, as defined in 14 CFR 11.19, in accordance with § 11.38, and they become part of the type-certification basis under § 21.17(a)(2).

Novel or Unusual Design Features

The BHTI Model 525 helicopter will incorporate the following novel or unusual design features: a four-axis full authority digital FBW FCS. Pilot control inputs, through the mechanically linked cockpit controls (cyclic, collective, directional pedals), are transmitted electrically to each of the three Flight Control Computers (FCCs). The pilot control input signals are then processed and transmitted to the hydraulic flight control actuators which affect control

of the main and tail rotors. The FCCs process the pilot control input signals depending on the flight control mode in affect.

Discussion

The current 14 CFR 29 standards do not provide adequate standards for pilot awareness of the flight control modes while operating the helicopter. The proposed special condition will require that suitable mode annunciation be provided to the flight crew for events that significantly change the operating mode of the system but do not merit the traditional warnings, cautions, and advisories.

Applicability

As discussed above, these special conditions are applicable to the BHTI Model 525 helicopter. Should BHTI apply at a later date for a change to the type certificate to include another model incorporating the same novel or unusual design feature, the special conditions would apply to that model as well.

Conclusion

This action affects only certain novel or unusual design features on one model of rotorcraft. It is not a rule of general applicability.

List of Subjects in 14 CFR Part 29

Aircraft, Aviation safety, Reporting and recordkeeping requirements.

The authority citation for these special conditions is as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701, 44702, 44704.

The Proposed Special Conditions

Accordingly, the Federal Aviation Administration (FAA) proposes the following special conditions as part of the type certification basis for Bell Helicopter Textron, Inc., Model 525 helicopters:

Mode Annunciation: A means must be provided to indicate to the crew any mode that significantly changes or degrades the handling or operational characteristics of the rotorcraft.

Issued in Fort Worth, Texas on November 16, 2017.

Larry M. Kelly
Manager, Rotorcraft Standards Branch,
Policy and Innovation Division
Aircraft Certification Service

[FR Doc. 2017-26418 Filed: 12/6/2017 8:45 am; Publication Date: 12/7/2017]